

# Lithuanian District Heating Association

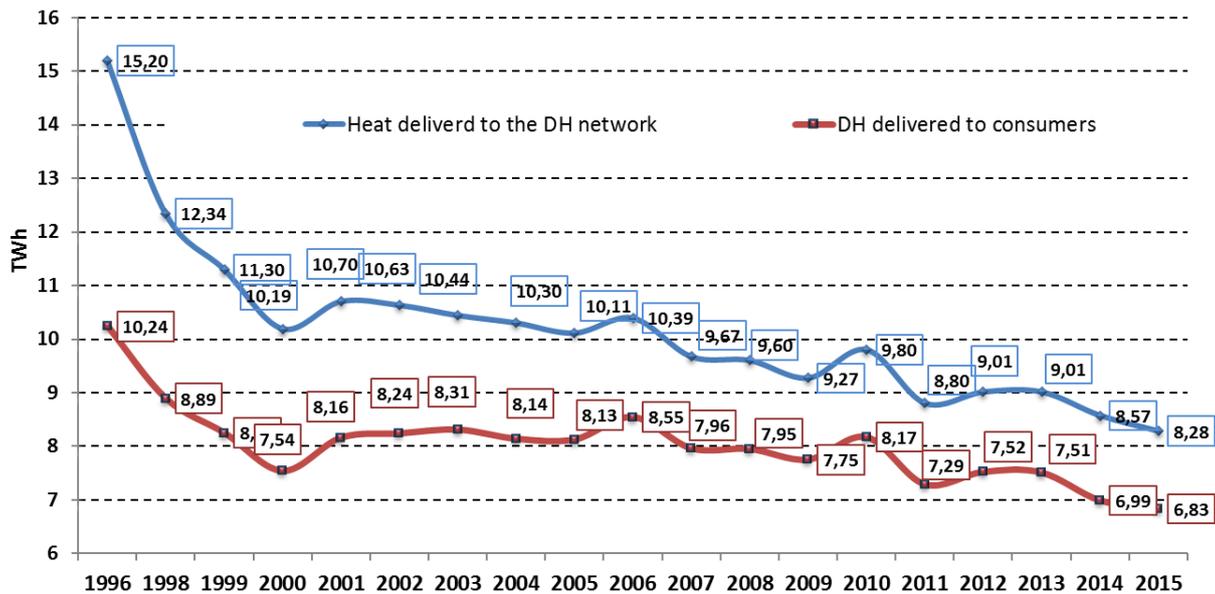
EHP Board meeting, October 10, 2016

National Update - Lithuania

## DH production

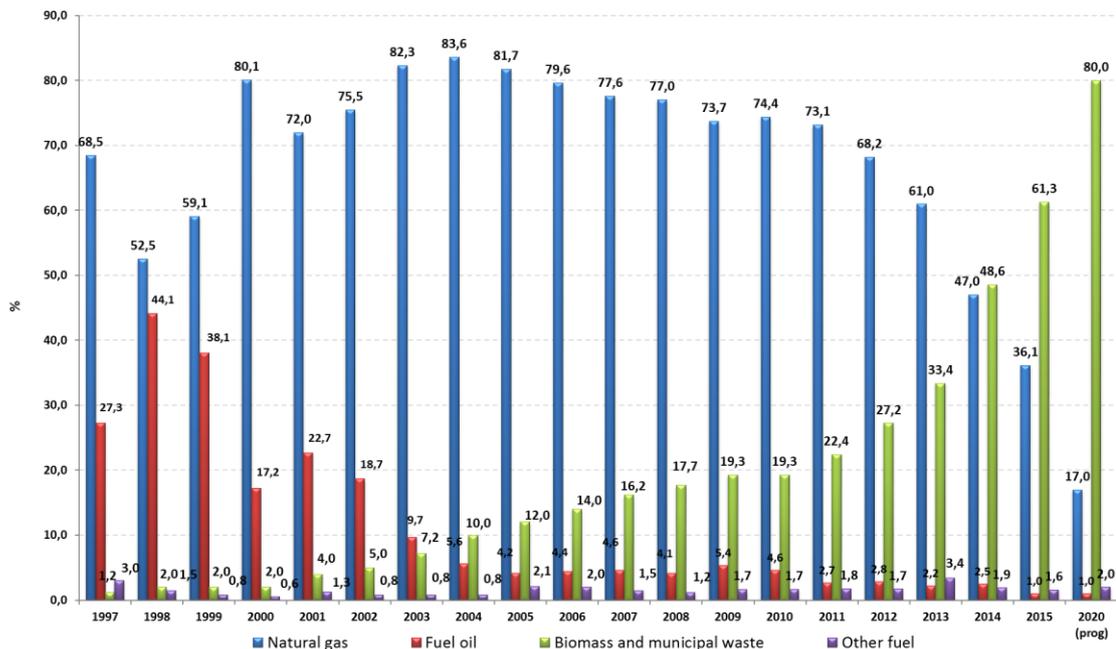
The year 2015 witnessed the lowest level of total district heating supplies (DH) ever recorded over the period of Lithuania's independence – total supplies of heat energy to consumers amounted to 6.88 TWh, being by 1.6% less year-on-year.

**DH production balance in Lithuania (1996-2015)**



The average price for heat in the Lithuanian DH sector was 6,1 euro ct/kWh (incl. VAT) in 2015 and is similar to price levels in the neighbouring countries. In 2016/2017 heating season it is forecasted 5,74 euro ct/kWh (incl. VAT) .

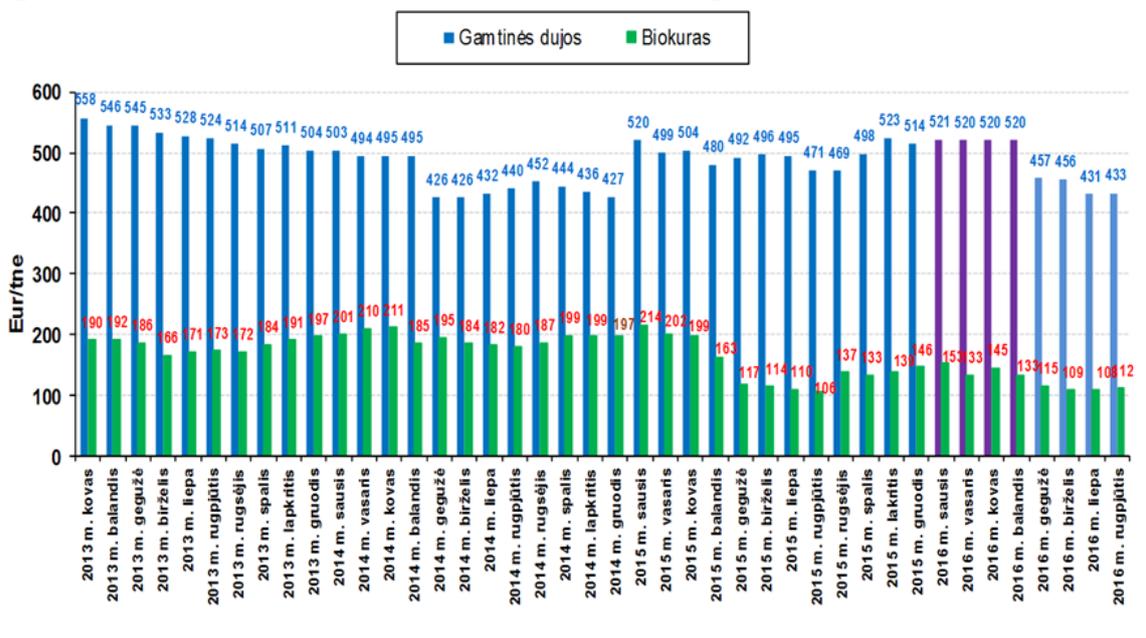
In 2015, the DH sector recorded one more impressive achievement – local biomass accounted for more than half of the fuel used for producing heat (61,3%). The structure of primary fuel has dramatically changed over the past few years.



The structure of primary fuel in DH production 1997 – 2015

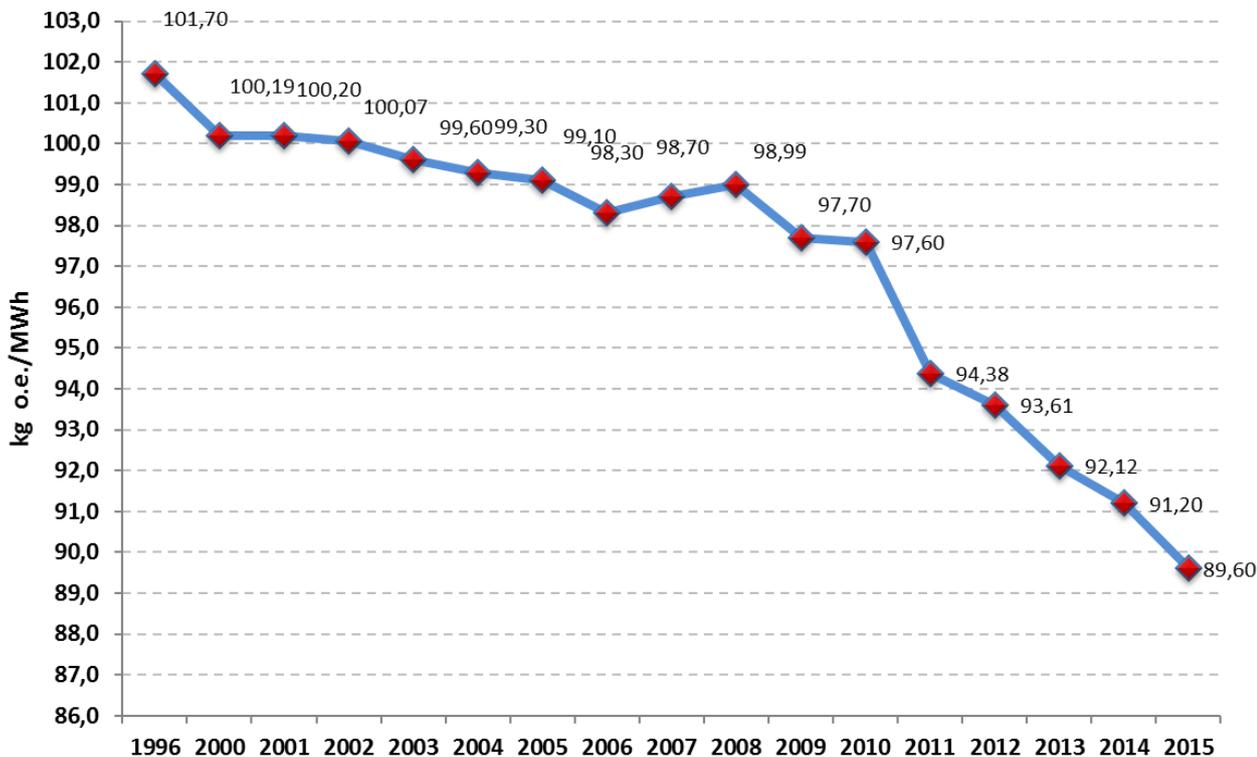
This means energy independence, fuel diversity, cheaper heat, etc. Saved funds can be used to satisfy other residential needs, increase domestic consumption, raise the stands of living and contribute to the budget of Lithuania. Extensive use of renewable sources for heat production helps in tackling climate change problems and will facilitate the implementation of the Paris Agreement signed by Lithuania last year. EU's aid allocation to biomass facilities can be looked at as one of the best investments of the state into the country's economy.

The average price of local biomass used for DH is 3 times less than the price of natural gas.



The average price of natural gas and biofuel for DH production in Lithuania Eur/ t<sub>ne</sub> excl. VAT

The replacement of imported natural gas with cheap, mainly local biomass not only reduces heat prices, but also creates considerable economic benefits and increases energy security. The replacement of Soviet-time boiler fleet with modern installations using biomass improves energy efficiency of the sector. In 1996, production of one MWh of heat required about 101.7 kg of fuel in oil equivalent, as compared to 89.6 kg<sub>oe</sub> at the net calorific value in 2015.

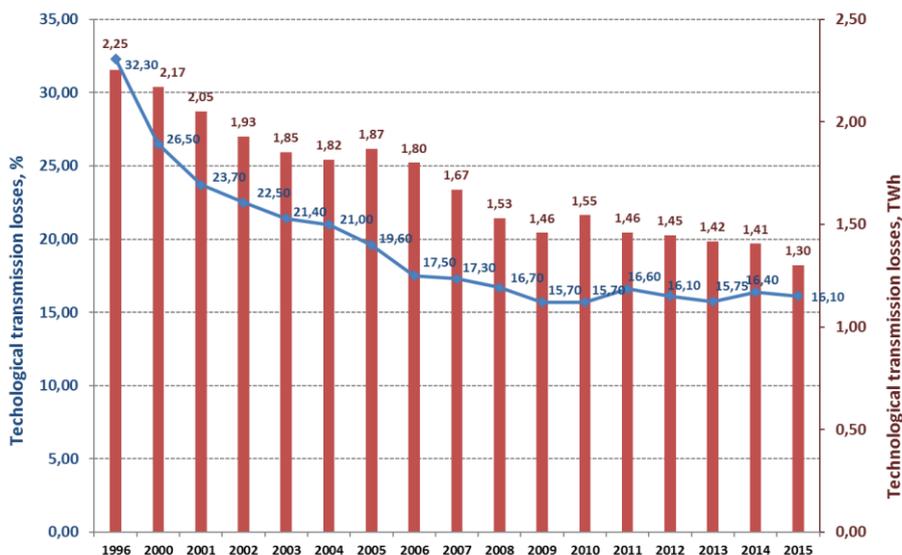


Comparative fuel consumption of DH sector (1996-2015)

## Heat transfer

Allocations for the modernisation and development of heat supply networks during the EU programming period 2014–2020 should amount to EUR 69.5 million. Unfortunately, these funds were not yet available in 2016.

In 2015, a total of about 1.32 TWh of heat was lost in the pipelines. This accounts for 16.1% of heat supplied to the DH networks.

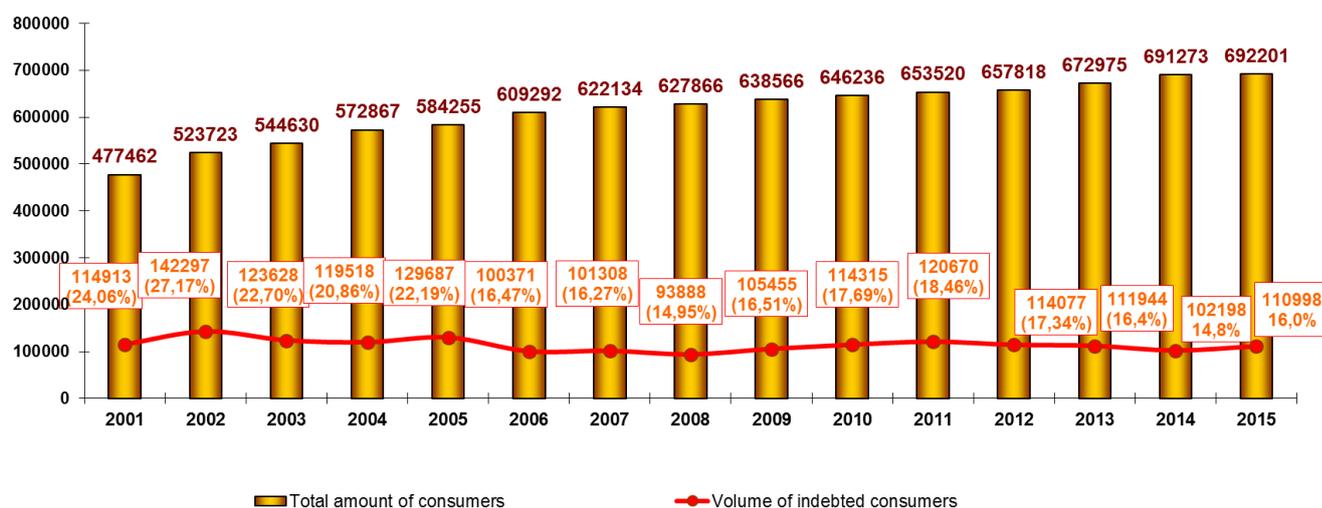


Technological transmission losses in DH networks 1996 – 2015

## DH consumption

Main consumers of district heating are residential consumers (private individuals) accounting for 72.6% of total consumers. One of the largest problems remains the heat energy inefficiency. In Lithuania, the average annual heat consumption in buildings is 209 kWh/m<sup>2</sup>, whereas the neighbouring Nordic countries use about 128 kWh/m<sup>2</sup> per year for the heating of buildings. Although most of DH technical indicators and heat prices are similar in the Baltic and Nordic countries, the size of heating bills is mainly determined by slow renovation of multi-apartment buildings.

Heat consumers ( 2001-2015)



Poorly organised maintenance of multi-apartment buildings in Lithuania often discredits the quality of DH service

In 2015-2016, there was little progress in improving the legal regulation of heat and hot-water supplies to multi-apartment buildings. Much focus went on heat distribution methods, but there is little sense in doing this when heat is unevenly distributed to apartments – some of them are overheated, while others are freezing; readings of heat and water meters are taken at different times; some apartments have oversized heating systems (using neighbours' heat); consumers have no opportunity to regulate energy consumption; etc. Solving of the aforementioned problems was

expected to be facilitated by transposing the Energy Efficiency Directive (2012/27/EU) into Lithuania's legislation. Unfortunately, there actually are no signs of application of the Directive for saving heat energy in multi-apartment houses. Although the Lithuanian District Heating Association (LDHA) has conducted a number of studies justifying energy saving opportunities, proposed an implementation action plan and repeatedly applied to national authorities, this did not change the attitude of indifference and, often, irresponsibility towards the residents of multi-apartment houses. It will take several decades to renovate multi-apartment buildings at current paces. The modernisation of domestic heating and hot-water systems could go much faster in terms of providing consumers with the high-quality heating service without waiting for large, complex renovation projects. It is possible to combine these two processes by implementing the modernisation of heating and hot-water systems in multi-apartment buildings with five and more years left until the anticipated implementation of complex renovation.

There is no entity/body that would be really responsible and accountable for heat consumption in apartment buildings; national control system does not exist either.

### **Lithuanian DH sector-specific issues in 2015**

The Lithuanian DH sector continued tackling persistent problems that definitely do not contribute to improving heat supply and making this sector more attractive for consumers. In this regard, we can mention the following problems:

1. Uncertainties about the ownership, maintenance, modernisation of heat substations and non-reimbursed return of investments (~EUR 100 million).
2. Supervision (maintenance) of internal heating and hot-water systems in apartment buildings, responsibility and shaping motivation for saving energy.
3. Uncertainties in application of Energy Efficiency Directive 2012/27/EU with regard to multi-apartment buildings.
4. The lack of legal regulation and consistency in the implementation of modern heat and hot-water meters and regulation devices in multi-apartment buildings ensuring the consumers' right to receive the desired quantity of heat energy and accurate heating bills.
5. The unresolved controversy with heat suppliers who are obliged to supply heat and issue heating bills to apartments without having access to the domestic systems and installation, as well as possibilities to ensure high-quality heat supply.
6. Taking into account the expansion of mixed heat supply methods, it is necessary to introduce two-component pricing.
7. Unregulated relationships between heat suppliers and water suppliers in the area of supplying hot water to consumers.
8. Unclear (non)operation of CHP plants within DH systems in the future.
9. Reimbursement of overpayment for natural gas to consumers (max. ~4 million euro reimbursed out of 34 million euro).
10. Setting solid fuel composition and quality standards; prevention of pollution caused by individual heating.
11. DH entities were put under a binding obligation to buy all fuels from the energy exchange without creating a system of reliable bio-fuel supplies (reservation of bio-fuels is not ensured in case of any disruption of supply of bio-fuels from the energy exchange).
12. Optimisation of excess capacities of heat supply entities taking into account the changed structure of fuels and new heat producers.
13. Providing leeway and shaping motivation to connect old and new consumers to DH systems.
14. Implementation of new environmental directives in the Lithuanian DH sector.